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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/749,710	12/31/2003	Roland A. Wood	H0001250CIP1(1100.1223101	8838

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EXAMINER

GABOR, OTILIA

ART UNIT PAPER NUMBER

2884

DATE MAILED: 04/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/749,710	WOOD ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Otilia Gabor	2884	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 31 December 2003 and 14 March 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 35-68 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 35-68 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 July 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

***Response to Amendment***

1. The amendment filed 03/14/2006 has been entered.

***Claim Objections***

2. Claims 41, 44, 49-54, 61 are objected to because of the following informalities: claim 41 contains the grammatically incorrect phrase "the adjustable filter is adjustable for a selecting a wavelength"; claim 49 contains the grammatically incorrect phrase "the plurality of detectors is comprises a variable wavelength filter"; Claim 50 contains the grammatically incorrect phrase "the each detector"; Claim 50 has no period at the end of the claim; claim 61 contains the grammatically incorrect phrase "is enclosed a hermetically sealed package". Appropriate correction is required.  
  
The rest of the claims are objected to as being dependent from an objected claim.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:  
  
The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.
4. Claims 35-67 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The newly introduced limitations that each of

the filters and each of etalons are adjustable independent of the adjustment of another filter or etalon of a detector of the plurality of detectors constitute new matter since the specification does not describe this feature.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 46-48 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

7. Claim 46 recites the limitation "the second wafer" in line 1. There is insufficient antecedent basis for this limitation in the claim.

There is no second wafer claimed in claims 35, 45 from which claim 46 depends.

The rest of the claims are rejected as being dependent from a rejected claim.

### ***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States

only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. Claims 35-37, 39-50, 52-56, 59-62, 64-68 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Cole et al. (U. S. Patent 5,550,373).

Cole discloses an adaptive sensor and means for detecting light using the adaptive sensor, where the sensor comprises: a plurality of detectors (14) and a plurality of adjustable filters (74) proximate to the plurality of detectors (14) (see especially Fig.4).

Cole discloses that the means of detecting comprises a detector for detecting light; a means for filtering light proximate to the means for detecting light, where the filtering means has an adjustable bandpass (see Col.3, lines 52-65).

Cole discloses a method for detecting comprising the step of providing a detector; placing a filter proximate to the detector and adjusting the filter to a desired wavelength; and directing the filter and the detector towards a target.

Cole discloses an array of detectors (14); an array of tunable etalons, where each etalon is independently tunable to provide a narrow and broad band transmittance of light to a detector of the array (14).

Cole discloses that the filters are Fabry-Perot bandpass filters.

Cole discloses a plurality of electrostatic actuators (26) connected to the adjustable filters, which filters are adjusted by the actuators.

Cole discloses that the plurality of detectors is a bolometer.

Cole discloses that the filters, actuators, and detectors are situated in a package (see Figures).

Cole discloses that the plurality of detectors are situated on a first wafer (chip) (12) and that the adjustable filters or etalons are situated on a second wafer (chip) (32), where the second wafer (chip) (32) is a topcap situated on the first wafer, thereby enclosing the plurality of detectors and filters (see Fig.4) and so that the etalon is aligned with the detector.

Cole discloses that the first and second wafers form an integrated vacuum package (see Col.2, lines 30-60).

Cole discloses that each filter may be adjusted to pass a narrow (2.5-5.5 micrometers) or a broad band (8-12 micrometers) of light.

Cole discloses that the second wafer can contain an IR transmissive window (32).

Cole discloses that the detectors form an array of bolometers, and that the etalons are Fabry-Perot etalons.

Cole discloses that the integrated package is sealed from the ambient environment (vacuum sealed).

Cole discloses a die-to-die or a wafer-to-wafer bonding of the wafers (chips) (see Col.5, lines 60-68, Col.6, lines 54-67).

10. Claims 35, 39, 40, 41, 42, 43, 49, 52, 55, 56, 59 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Harling et al. (U. S. Patent 6,222,454).

Harling discloses an adaptive sensor comprising a plurality of detectors (21a,

21b) and a plurality of adjustable bandpass filters (21a, 51b) proximate to the plurality of detectors (see Figs.2, 6 and corresponding description). The method of detecting includes providing a detector, placing the filter proximate to the detector, adjusting the filter to a desired wavelength and directing the filter and detector toward a target.

### ***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 38, 51, 57, 58, 63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cole.

Cole uses piezoelectric actuators and thus fails to use electrostatic or capacitive actuators in the detecting system. However, it would have been obvious to one having ordinary skill in the art to substitute one for the other since both types of actuators are well known and frequently used an substituted one for the other for their obvious particular advantage.

### ***Response to Arguments***

13. Applicant's arguments filed 03/14/2006 have been fully considered but they are not persuasive. The discernable argument that the Applicant presents in his Reply is that 1) the prior art reference Cole does not disclose a filter or etalon that is adjustable

independently from any other filter or etalon present in the detector arrangement; and that 2) Cole fails to disclose the claimed types of actuators. The second argument was addressed in the rejection above. The first argument is not persuasive because 1) the adaptive sensor disclosed in the present Application does not contain an adjustable filter or etalon that is adjustable independently of any other filters and therefore this limitation when read in light of the specification is similar to the one disclosed in the reference Cole, and 2) even if this limitation is accorded patentable weight, the Cole reference clearly discloses in Col.3, lines 52-64 that each individual filter can be tuned to detect a variety of radiation on the respective detector. Since the tuning is done by changing the distance between the mirrors, and since each filter contains its own mirror pair, it follows that each filter can be independently adjusted irrespective of the adjustment of any other filter in the arrangement. As such, the claims still stand rejected as shown in detail above.

### ***Conclusion***

**14. THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

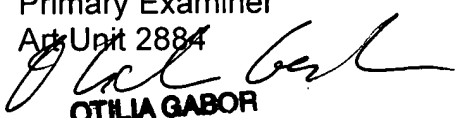


shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Otilia Gabor whose telephone number is 571-272-2435. The examiner can normally be reached on Monday-Friday between 9am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta can be reached on 571-272-2444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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